

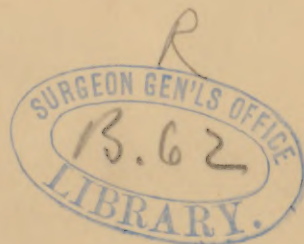
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MEDICAL HISTORY

OF THE LATE

PRESIDENT DAY.



OBSERVATIONS,
ANTE-MORTEM AND POST-MORTEM,
UPON THE CASE OF THE LATE PRESIDENT DAY.

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THE value and interest attaching to the statement of a case of disease, often depends as much upon what is known of the personal history of the individual during his life, as upon the pathological appearances noticed after death; and where the semeiological and pathological facts are connected in the relation of sequence, the lessons which they teach are doubly valuable and instructive.

With regard to the eminent man whose case forms the subject of this paper, some other facts, not strictly pertinent, or perhaps necessary, may not be without interest.

Jeremiah Day was born in Washington, Conn., August 2d, 1773; and during the war of Independence was old enough to appreciate the nature of the issues involved in that struggle, and well remembered having seen some of the principal actors in it.

His infancy and boyhood were marked by indications of feeble vitality; and the prospect of his arriving at the maturity of manhood, never very flattering, sensibly diminished as he approached that period. He entered the Freshman class in Yale College in 1789, but was soon obliged to leave college on account of a "pulmonary difficulty," which was, doubtless, the incipient stage of the organic disease of the lungs which subsequently developed itself. These symptoms were so far alleviated that for two years he taught a school in Kent and Winchester, when he found his health so much improved that he returned to College and was graduated in the Class of 1795.

The succeeding six years, a period of great feebleness, were spent partly in teaching at Greenfield for a year, as tutor in William's College for two years, and as tutor in Yale College for three



years, during which last period he studied Theology, and preached occasionally in vacant churches in the vicinity, until 1801, when he was elected Professor of Mathematics and Natural Philosophy in the College.

He was prevented, however, from entering upon his professorial duties, by the occurrence of an alarming pulmonary hæmorrhage, which happened after a Sabbath service at West Haven where he had preached for Rev. Dr. Williston. Other hæmorrhages followed, by which he was greatly prostrated, losing large quantities of blood. According to the prevailing practice of that time, he was freely bled from the arm—"the doctors taking," as he remarked to me, "nearly all of the little remaining blood in his body."

In this condition of extreme exhaustion, at the age of twenty-eight, he abandoned temporarily the purpose of entering upon the duties of his professorship, and in September of that year, he made a voyage to Bermuda to try the effect upon his health of a warm climate. While there, he was treated with Tincture Digitalis to the extent of producing its cumulative effects, which were so profoundly sedative that for a time his life was despaired of. Indeed so reduced and attenuated was he on leaving home, that none of his friends expected to see him again alive, and the published letters of Professor Kingsley and others, of that period, lament him as already lost to science and the world. He returned, however, in the following April, but without having experienced any material benefit; so that he now gave up entirely all idea of fulfilling his College appointment; and bidding farewell to his associates, he retired to his home among the hills of Washington, to die.

The hæmorrhages continued, and were followed by venesections, until a Dr. Sheldon of Litchfield, who enjoyed a wide reputation for "curing consumption," chanced to see him, and casually remarked that he needed Iron"—and "he believed he could help him."

Although the patient was evidently in a hopeless decline, he was placed under the care of Dr. Sheldon, who would seem to have been an acute observer, and in his knowledge of pathology and therapeutics, far in advance of his time. Under the use of preparations of iron with bark, and nutritious food, Mr. Day soon began to exhibit signs of returning strength and health; and in 1803, although he seemed to his friends literally like one raised from the dead, he was so far restored to health, as to be inaugurated as professor.

From this time all symptoms of pulmonary disease disappeared, and did not return.

From 1803, Mr. Day continued uninterruptedly to discharge his professorial duties, until he was elected to succeed Dr. Dwight as President of Yale College in 1817; and he performed the arduous duties of the office, without serious disturbance of his health, until 1836, when at the age of sixty-three, he first became aware that he had some affection of the heart, as indicated by its irregular and intermitting action.

On several occasions, at the College chapel and at his own house, he was attacked by alarming syncope, which continued for a considerable time, and probably led him instinctively to adopt the slow, cautious and measured step, by which the present generation have mostly known him in our streets.

It was the opinion of Dr. N. B. Ives, who was his physician for many years, that it was a case of cardiac hypertrophy; and this opinion was corroborated by the subsequent diagnosis of Dr. Pennock of Philadelphia—at that time the highest authority in this country, in diseases of this class. He will be remembered by some present, as the editor of the first American edition of Dr. Hope's classical work on diseases of the heart.

The attacks of syncope were treated on general principles; but the frequent attacks of palpitation, and irregular tumultuous action of the heart, were treated by Dr. Pennock's advice, with cupping between the scapulæ, and always with relief. He was also blistered along the spine, and took half a grain of digitalis and a quarter of a grain of calomel three times a day with vegetable tonics.

Dr. Ives has told me that as the patient advanced in years, he drew less and less blood by cupping, until finally, only dry cups were applied—and it was noticeable that they were followed by the same degree of relief as when blood was drawn, suggesting the idea that possibly they might of themselves have been sufficient to relieve the congestion from deranged nervous action which was believed to exist.

The increasing frequency of these attacks, however, admonished him so constantly of the necessity of leading a quiet and more retired life, that in 1846, he resigned the Presidential office, which he had held for twenty-nine years; and for the last twenty years of his life, he devoted himself to letters and the society of his friends—daily expecting to die suddenly, at any moment—yet he lived

far beyond the allotted years of man, with an amount of organic disease seldom exceeded—and finally died of *old age*.

My professional acquaintance with President Day, dates only from about 1860. He frequently consulted me on account of diarrhœa, by which he was much debilitated; the attacks being attended with fever, and sometimes with great cardiac disturbance. The promptness with which he rallied from these attacks, and the surprising sensitiveness of his system to the action of tonics and stimulants, resembled the susceptibility to the impressions of medicinal agents which characterizes the period of infancy. He has often told me that he never experienced a headache.

He was never known to complain of the vesical irritation, which is so very common in old men; but for a number of years it was believed that he suffered severely from this cause—frequently showing by suppressed respiration, and involuntary and almost inaudible expressions of pain, that he endured daily, extreme suffering from vesical tenesmus.

In April, 1867, he fell upon the pavement, and being unable to rise, was carried to his bed. No symptoms of fracture or dislocation could be discovered, yet he never afterwards walked; but after a time, was daily placed in a wheeled chair, and spent most of the day in his study, where he received his friends, and took part in the meetings of his club as usual.

For a few only, of his last days was he entirely confined to his bed; then his strength rapidly failed, and a drowsiness from which he was easily aroused, gradually deepened into coma, and without pain, he quietly ceased to breathe on the 27th of August, having just entered upon his ninety-fifth year.

I have mentioned more particularly the circumstances attending his last illness, if such it could be called, for they mark so accurately the decline of the vital power, uninfluenced by any recognizable organic disease. It was simply the gradual decay of old age.

Twenty-four hours after death, an autopsy was made by Dr. M. C. White, in presence of Dr. N. B. Ives and myself.

Of course great interest was felt respecting the appearances which the thoracic organs might present, as from the history of the case, considerable changes in the structure of the heart and lungs were to be expected. Rigor mortis very decided—body much emaciated.

On opening the thorax, only a moderate quantity, perhaps a pint, of serum was found in both cavities—the lungs were every where quite free from tubercular deposit, and in all respects healthy. In the apex of each lung, however, was found a dense, corrugated circular cicatrix, an inch and a half or more in diameter—also a *third* circular cicatrix, on the left side of the left lung, a few inches below the apex, each involving such a depth of tissue, as to indicate that the vomicae of which they were the remains, had been large and of long duration. Both lungs were slightly adherent at the apex.

Here then, was all that remained to mark the beginning, progress and cure of a case of tubercular consumption, occupying *twelve years* in its period of activity, and with its incipient stage, dating back more than *three quarters of a century*. A legible record, surpassing in interest and importance to the human race, those of the slabs of Nineveh, or the Runic inscriptions.

The heart was of normal size, or a little less, and filled with very dark coagulated blood; its walls were thin, and its valves free from disease, the aortic valves holding water perfectly—the right auricle was dilated to the size of a duck's egg, the coronary arteries generally ossified, and the entire organ presenting the usual appearances attending Angina Pectoris, excepting the absence of hypertrophy.

The spleen was very much atrophied, and upon one side, forming nearly the entire bulk of what remained of it, was a steatomatous tumor, two inches and a half in diameter, hard and firm, looking like a mass of spermaceti.

The pancreas was healthy. The liver was small, and presented the appearance called "Nutmeg" liver, approaching in portions, the "hob-nail" variety.

The supra-renal capsules were almost obliterated. The kidneys were small, and each contained numerous urinary cysts, some as large as walnuts, while others were scarcely visible to the naked eye.

The bladder was also small, its walls thickened, and containing about two ounces of urine, which was not examined. Upon the left wall of the bladder, however, was a sac, open at the top, containing, perhaps, the most remarkable collection of urinary calculi ever seen in one individual.

It consisted of *nineteen loose stones* of the uric acid variety, weighing ten drachms and two scruples—and of such peculiar

shape as to suggest the idea that they had originally formed several larger calculi, which had undergone spontaneous separation in the bladder.

The integral sections present such a similarity of outline, and such singular uniformity in their faces, several of which have an angle of 120 degrees, that the conclusion is almost irresistible, that they were formed and separated in obedience to some mathematical law. An idea that I think will not fail to suggest itself, on examining the specimens themselves, or the accompanying engravings.

It is noticeable that in the two calculi that I have readily reconstructed, their separation was into fragments of *seven* around a central pillar. The commencement of this process of mathematical division is shown in Fig. A, and its completion is seen in Fig. B. Midway of the central pillar of this calculus, B, there is a horizontal disc-like nucleus, the rounded projecting edge of which was accurately fitted into corresponding depressions in the internal facets of the sections forming the original stone.

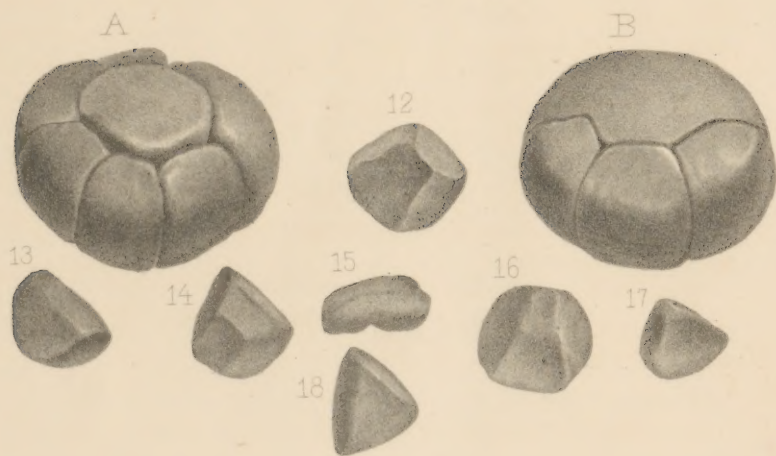
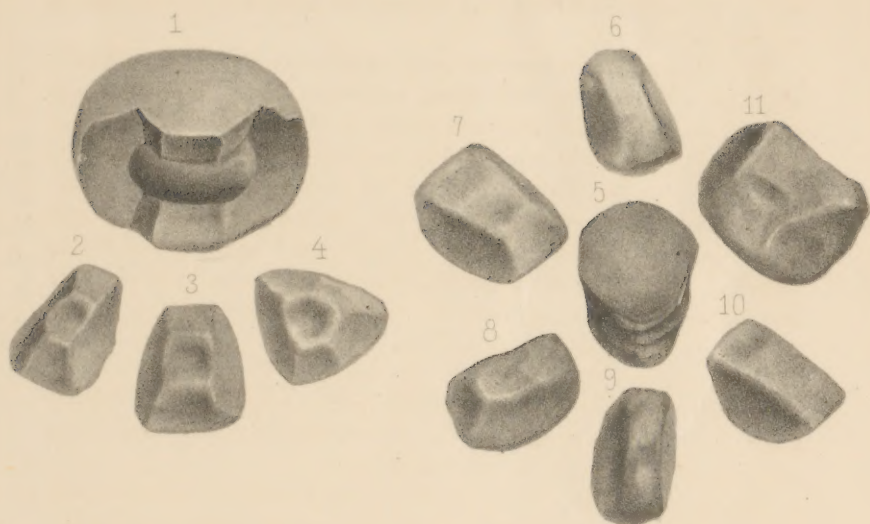
The outline of what was once, doubtless, a similar horizontal nucleus, is distinctly shown midway in the central pillar of the other calculus, Fig. 5; but now worn down to a level with the general surface.

After reproducing these two calculi, A and B, from the accurately fitting sections, there remained eight pieces having the same general outline as the others, with the same central depression upon their internal angles, showing that originally, they were the component parts of a third calculus, having the same arrangement of seven sections around a central pillar; but they are too much worn by long attrition, to be re-assembled.

Figures 1, 2, 3 and 4, are, segments of the calculus, re-united at B.

Figures 5, 6, 7, 8, 9, 10, 11, are segments of the calculus which I have re-united at A.

The remaining figures, are those of the stones that could not be united. One fragment, not here shown, was used by Prof. G. F. Barker for analysis.



The spontaneous separation of urinary calculi, within the bladder, is a phenomenon which has not been frequently recorded, although instances of their disintegration and passage from the bladder in fragments more or less comminuted in the form of sand, or of angular pieces of considerable size, have been occasionally observed from a very early period, and probably led to the ancient practice of attempting their chemical solution by medicating the urine through substances introduced by the stomach, or injected directly into the bladder—and we are doubtless indebted to the observation of spontaneous separation, or disintegration of urinary calculi, for the substitution of the now common operation of lithotripsy instead of lithotomy.

In "*Jenaische Zeitschrift für Medicin und Naturwissenschaft*," Leipzig, July, 1866, is an extended article on this subject, by Dr. Julius Geinitz, who in mentioning the early observations that have been recorded, says that he has collected from the literature of the subject, fifty-two cases, giving authorities and dates ranging from 1685 to 1864. A case was also reported to the British Medical Association in 1867—and from the great rarity of such specimens in the largest collections of calculi of which we have any knowledge, it must be inferred that their occurrence is very infrequent.

By what mathematical or chemical law, were these calculi spontaneously separated in a manner so peculiar?

Had the laws of crystallization anything to do with their formation or separation?

Were striæ of animal matter interspersed throughout their structure during the formative process, and which by some change in the chemical reaction of the urine were dissolved out, allowing the mass to fall asunder?

Were they broken by external force applied to them through concussion, as in walking or leaping? are questions which naturally suggest themselves.

Spontaneous separation has been attributed to each of these causes; it has also been referred by Geinitz to the operation of chemical action of another kind. He says, when any single layer of the stone is converted into a compound that occupies a greater volume than it did previously, the more external layers may easily be split off. Thus in case of the uric acid calculus, he supposes that the urine having become more strongly alkaline, percolates through the outer layers, and acting upon the uric acid nucleus,

converts it into urate of ammonia, the volume of which being much greater than that of uric acid, a force is generated, which, acting from within outwards, disrupts the calculus. So many forcible objections to this ingenious theory of spontaneous separation present themselves, that it must be classed with the others alluded to which are all unsatisfactory, and the problem remains unsolved.

In reflecting upon the sacculated relations of this calculous quarry, and the high lateral position of the sac, it seems probable that their presence could not have been discovered by exploration with the metallic sound, although many of the symptoms of urinary calculus were present.

Ferguson, speaking of lithrotrity, says, "should the bladder be sacculated, a condition which can scarcely be ascertained on the living subject, the difficulties would be greatly increased." He says further, that "a large pouch sufficient to conceal a calculus of large size, is exceedingly rare."

It is hardly too much to say, then, that the presence of these calculi could not have been detected during life.

A writer in Holmes' recent work on Surgery, speaking of the same source of difficulty and error in the diagnosis of urinary calculi, says, "it is quite uncommon." He mentions the case of a man in whom Morand had discovered a calculus by the sound, but which could not afterwards be recognized by other surgeons. At his death, years afterwards, the patient willed his body to Morand, as he said, "to teach him a lesson." On post-mortem examination, however, there were found "three calculi, as large as apricots, sacculated on the side of the bladder."

The reflected light which this remarkable case throws upon the status of practical medicine, as it existed in the last century, invests it with peculiar interest. It was a connecting link between the old dynasty and the new—a surviving witness of a wonderful revolution in the opinions of men, second only in magnitude and importance to that which ushered in the Christian era.

Holding on in blind faith, to the bloody vestments of the past with one hand, it reached eagerly forward to welcome the dawn of Rational Therapeutics with the other; and was doubtless regarded at the time, as strongly sustaining the truth of the new doctrine which was then just beginning to make its way among the profession, and which soon after divided it into two hostile parties. The one holding the long undisputed dogma, that all disease was *sthenic* in its nature, and was only to be cured by *bloodletting and callosities*;

while the other contended as stoutly, that disease was *asthenic* in essence and only to be cured by *stimulants* and *tonics*.

Few of us know anything except from history or tradition, of the fierce war that for a whole generation raged among the doctors. It was literally "war to the knife," and was marked by gross personalities and bitterness. But the phlebotomists were driven from the field; and where at that time, a *thousand* patients were bled, *not one* is bled to day, and yet the sick recover as promptly, and the value of human life has steadily increased.

As a general rule, perfect unity of opinion is incompatible with permanent scientific progress. Mindful of this fact, the profession, true to its own traditional character for disagreement, while it has been reluctantly compelled to yield its unanimous assent to the opinions and practice of the conservative school, is again widely divided in opinion as to the causes that have produced this great revolution in practice.

One party, of which Dr. Stokes, of Dublin, may be called the representative, arguing that venesection and cathartics are not as well borne as formerly, because of the great change that has been silently progressing in the *diathesis of disease*, consequent upon changes in the *habits and constitutions of the population*, incident to increased wealth and greater diversity of occupations, as well as changes in the character of the seasons and the topography of the country, from the destruction of forests and construction of public works, and other causes. The other party, represented by Professor Bennett of Edinburg, affirm that the disuse of blood-letting is wholly due to the prevalence of the new and improved views of therapeutics, as promulgated by himself and others, and based upon the more intelligent study of pathological anatomy. Undoubtedly the opinions of each school are in the main correct.

Until within a few years, the possibility of a *natural cure* of tubercular consumption, after it had reached the stage of suppuration and the formation of vomicae, was denied. The frequent discovery, however, after death, of cicatrices in the lungs, and of dry and empty cavities, communicating with the bronchi of living persons who, during former years, had presented all the physical signs of consumption, leaves no room to doubt that such favorable terminations, are much more frequent than is even yet supposed.

